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10/758,903	01/16/2004	Brad D. Tidwell	710101.1380	7078

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EXAMINER

RUTKOWSKI, JEFFREY M

ART UNIT	PAPER NUMBER
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2616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/758,903

Applicant(s)

TIDWELL ET AL.

Examiner

Jeffrey M. Rutkowski

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/26/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. **Claims 1-3, 5, 7-8, 11-13, 15, 17-18, 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Renucci et al. (US Pat 6,996,134), hereinafter known as Renucci and further in view of Daruwalla et al. (US Pat 7,058,007), hereinafter known as Daruwalla.

2. For **claims 1, 7-8, 17-18**, Renucci teaches a digital modulator/demodulator **58** may use a number of transceivers to merge two or more subscriber lines into a single modulated signal [**col. 5 lines 33-42 and figure 3**]. In addition, up to three subscriber lines may exist at a customer location [**col. 9 lines 35-40**] (a first transceiver configured to communicate via a first subscriber line with a transceiver located at a remote premises; a second transceiver configured to communicate via a second subscriber line with a transceiver located at the remote premises; a third transceiver configured to communicate via a third subscriber line with a transceiver located

Art Unit: 2616

at the remote premises). Renucci teaches an appropriate lifeline path **96** is switched to low impedance to enable the Added-Main-Line (AML) concentrator to send and receive information over a local loop [**col. 6 lines 5-10 and figure 3**]. Renucci does not teach the concept of 1:N protection. Daruwalla teaches the 1:N protection limitation absent from the teachings of Renucci by disclosing a Cable Modem Termination System (CMTS) architecture where one working machine provides protection for all of the other machines [**col. 6 lines 24-27**] (claim 7: logic configured to allow the third transceiver to selectively backup both the first and second transceivers; claims 1,8, 18: logic configured to switch communication from the first transceiver to the third transceiver in response to a detection of a communication problem associated with the first subscriber line, the logic further configured to switch communication from the second transceiver to the third transceiver in response to a detection of a communication problem associated with the second subscriber line; claim 17: enabling a third pair of transceivers coupled to a third subscriber line to selectively backup both of the communicating steps).

3. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a 1:N transceiver protection scheme in Renucci's invention to use all available resources during normal operation.

4. For **claim 2**, the combination of Renucci and Daruwalla teach everything in **claim 1**. Renucci teaches a gateway **12**, which includes an AML concentrator **24** [**col. 3 line 63**], can be located in a central office [**col. 3 line 15**] (wherein the first, second, and third transceivers are located at a central office of a telecommunication network).

5. For **claim 3**, the combination of Renucci and Daruwalla teach everything in **claim 1**. Renucci teaches the modulator/demodulator **58** uses a number of Integrated Services Digital

Art Unit: 2616

Network (ISDN) 2B1Q transceivers to merge information from two or more subscriber lines **[col. 5 lines 33-42 and figure 3]**. Each subscriber line provides a distinct channel for carrying bi-directional information to and from a customer location **[col. 3 lines 34-44]** (wherein the first, second, and third transceivers are located at a customer premises).

6. For **claims 5, 12, 15**, the combination of Renucci and Daruwalla teach everything in **claims 1, 7 and 13, respectively**. Renucci teaches a power conditioner 64 injects Direct Current (DC) power into the modulated signal to provide power to customer equipment **[col. 5 lines 52-55]** (a direct current (DC) power source). Bypass relays 82 are used to switch subscriber lines 84A,84B from a processing module 78 to AML modulator/demodulator 76 **[col. 9 lines 5-10 and figure 5]** (a control element configured to electrically isolate the first subscriber line from the DC power source when the third transceiver is being used to backup the first transceiver, the control element further configured to electrically couple the first subscriber line to the DC power source when the first transceiver is communicating on the first subscriber line).

7. For **claim 11**, the combination of Renucci and Daruwalla teach everything in **claim 7**. Renucci teaches a digital modulator/demodulator 58 may use a number of transceivers to merge two or more subscriber lines into a single modulated signal **[col. 5 lines 33-42 and figure 3]** (wherein the logic is configured to split an input data stream into at least a first output data stream and a second output data stream, the logic configured to interface the first and second output data streams with the first and second transceivers such that the first and second transceivers respectively transmit the first and second output data streams on the first and second subscriber lines). Renucci does not teach the concept of 1:N protection. Daruwalla teaches the 1:N protection limitation absent from the teachings of Renucci by disclosing Cable Modem

Art Unit: 2616

Termination System (CMTS) architecture where one working machine provides protection for all of the other machines [col. 6 lines 24-27] (the logic configured to interface one of the output data streams with the third transceiver in response to a communication problem associated with one of the first and second subscriber lines, the logic further configured to dynamically select the one output data stream for interfacing with the third transceiver based on which of the first and second subscriber lines is associated with the communication problem).

8. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a 1:N transceiver protection scheme in Renucci's invention to use all available resources during normal operation.

9. For **claim 13**, Renucci teaches the use of three transceivers with respective subscriber lines [see **claim 1**] (a first transceiver configured to communicate via a first subscriber line with a transceiver located at a remote premises; a second transceiver configured to communicate via a second subscriber line with a transceiver located at the remote premises; a third transceiver configured to communicate via a third subscriber line with a transceiver located at the remote premises). The combination of Renucci and Daruwalla teach the use of a modulator/demodulator and an 1:N protection scheme [see **claim 7**] (logic configured to split an input data stream into at least a first output data stream and a second output data stream, the logic configured to interface the first and second output data streams with the first and second transceivers such that the first and second transceivers respectively transmit the first and second output data streams on the first and second subscriber lines, the logic further configured to interface one of the output data streams with the third transceiver in response to a communication problem associated with one of the first and second subscriber lines, the logic

Art Unit: 2616

further configured to dynamically select the one output data stream for interfacing with the third transceiver based on which of the first and second subscriber lines is associated with the communication problem).

10. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a 1:N protection scheme in Renucci's invention to use all available resources during normal operation.

11. For **claim 21**, Renucci teaches the use of a modulator/demodulator with a set of transceivers [see **claim 1**] (splitting a data stream into a first data stream and a second data stream; interfacing the first data stream with a first transceiver such that the first data stream is communicated by the first transceiver on a first subscriber line to a transceiver located at a remote premises; interfacing the second data stream with a second transceiver such that the second data stream is communicated by the second transceiver on a second subscriber line to a transceiver located at the remote premises). A status monitor **80** is used to determine if data packet service has failed in response to a power failure at a customer location [col. 8 lines 62-65] (detecting a communication problem associated with one of the first and second subscriber lines). The teachings of Daruwalla disclose the use of a 1:N protection mechanism [see **claim 1**] (interfacing, in response to the detecting step, one of the first and second data streams with a third transceiver such that the one data stream is communicated by the third transceiver on a third subscriber line to a transceiver located at the remote premises; and dynamically selecting the one data stream to be interfaced with the third transceiver in response to the detecting step based on which of the first and second subscriber lines is associated with the communication problem).

Art Unit: 2616

12. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a 1:N protection scheme in Renucci's invention to use all available resources during normal operation.

13. **Claims 4, 9, 14, 19 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Renucci as modified by Daruwalla as applied to **claims 1, 7, 13, 17 and 21, respectively**, above, and further in view of Doll et al. (US Pat 5,694,398), hereinafter known as Doll.

14. For **claims 4, 9, 14, 19 and 22**, the combination of Renucci and Daruwalla teach everything in **claims 1, 7, 13, 17 and 21, respectively**. Renucci teaches a power conditioner 64 injects Direct Current (DC) power into the modulated signal to provide power to customer equipment [col. 5 lines 52-55] (a direct current (DC) power interface configured to apply a DC voltage difference across the taps). Renucci does not teach the use of transformers or taps. Doll teaches the transformer and tap limitations absent from the teachings of Renucci by disclosing transformers LT_x are used in Network Termination (NT) equipment [figure 2]. A phantom connection from taps on the subscriber side of the transformers are used to supply subscriber terminals [col. 4 lines 27-46 and figure 2] (a transformer coupled to the third transceiver, the transformer having a pair of taps coupled to the third subscriber line).

15. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use transformers and taps in Renucci's invention to supply voltage to allow for the operation of subscriber equipment.

16. **Claims 6, 10, 16, 20 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Renucci as modified by Daruwalla as applied to **claims 1, 7, 13, 17 and 21, respectively** above, and further in view of Obelode et al. (US Pat 4,935,642), hereinafter known as Obelode.

Art Unit: 2616

17. For **claims 6, 10, 16, 20 and 23**, the combination of Renucci and Daruwalla teach everything in **claims 1, 7, 13, 17 and 21, respectively**. Renucci teaches a power conditioner **64** injects Direct Current (DC) power into the modulated signal to provide power to customer equipment [**col. 5 lines 52-55**]. Each customer location uses two or more subscriber lines [**col. 5 line 23**]. Renucci does not teach the summation of power across the subscriber lines. Obelode teaches the summation of power limitation absent from the teachings of Renucci by disclosing the distribution of electric power to functional units [**abstract**]. A preset limit value of the total power supply, power coming in from subscriber lines [**col. 3 lines 25-30**], needs to be less than the sum of the highest possible individual powers (**P10, P11, P12**) [**abstract**] (further comprising a control element configured to sum power from at least two of the subscriber lines).
18. It would have been obvious to a person of ordinary skill in the art at the time of the invention to calculate the total power supply via summation of the subscriber lines in Renucci's invention to make sure the subscriber lines supply enough power to allow a subscriber's station to operate.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey M. Rutkowski whose telephone number is (571) 270-1215. The examiner can normally be reached on Monday - Friday 7:30-5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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